WHAT IS CLAIMED IS:

1. An apparatus for drawing a line connecting a start point to an end point, the start and end points being represented by mutually different sets of coordinates, the apparatus comprising:

midpoint coordinate generating means for generating coordinates for first, second and third midpoints, the first midpoint being located in the middle of a line segment connecting the start and end points together, the second midpoint being located in the middle of a line segment connecting the start point and the first midpoint together, the third midpoint being located in the middle of a line segment connecting the end point and the first midpoint together; and

display means for presenting the start point, the first, second and third midpoints and the end point thereon.

2. The apparatus of Claim 1, wherein the midpoint coordinate generating means further generates coordinates for other midpoints, each of the other midpoints being located in the middle of a line segment ending at two adjacent ones of the points.

3. The apparatus of Claim 1, wherein the line connecting the start and end points together is divided into a number 2^n of line segments, where n is an integer equal to or greater

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than zero, and

wherein each said line segment is further divided by two with the line segment regarded as ending at a new pair of start and end points.

4. The apparatus of Claim 3, wherein at least one mid-point is obtained by dividing the line connecting the start and end points together into a number 2^n of line segments, where n is an integer greater than zero, and

wherein each said midpoint obtained is located in the middle of a line segment connecting two of the other points, where one of the two points is located closer to the start point while the other is located closer to the end point.

5. An apparatus for drawing a line connecting a start point to an end point, the start and end points both being presented on display means and being represented by mutually different sets of coordinates, the apparatus comprising:

first and second data storage means, each said storage means accepting a plurality of input coordinate data and sequentially outputting one item of these data after another on a first in, first out basis;

adding means for receiving and adding together the respective coordinate data output from the first and second data storage means and outputting added data; and

divide-by-two means for dividing the added data by two

and outputting divided data,

wherein the coordinate data output from the first and

second data storage means are input to the first data storage

means, and

wherein the divided data is input from the divide-by-two

means to the second storage means, and

wherein the line connecting the start and end points to-

gether is drawn on the display means in accordance with the

divided data output from the divide-by-two means.

6. The apparatus of Claim 5, wherein the divide-by-two

means is a shifter that is so interconnected as to shift the

added data to the right by one bit.

7. The apparatus of Claim 5, further comprising iterati-

on control means for regulating the number of times the out-

put data is fed back to the first and second storage means,

wherein the iteration control means includes:

a longer side calculator/selector for calculating respec-

tive absolute values of a difference between X coordinates and

a difference between Y coordinates of the start and end points

and for outputting one of these two differences that has the

greater absolute value; and

a number-of-times comparator for determining, by the ab-

solute value, the number of times the output should be fed back.

8. The apparatus of Claim 5, further comprising:

first and second color data storage means, each said color data storage means accepting a plurality of input color data and sequentially outputting one of the data after another on a first in, first out basis;

color data adding means for receiving and adding together the respective color data output from the first and second color data storage means and outputting added color data; and

color data divide-by-two means for dividing the added color data by two and outputting divided color data,

wherein the color data, which are output from the first and second color data storage means and correspond to the start and end points, respectively, are input to the first color data storage means, and

wherein the divided color data, output from the color data divide-by-two means, is input to the second color data storage means, and

wherein the color of the line connecting the start and end points together is determined in accordance with the divided color data.

9. The apparatus of Claim 5, further comprising:

first and second brightness data storage means, each said brightness data storage means accepting a plurality of input brightness data and sequentially outputting one of the data after another on a first in, first out basis;

brightness data adding means for receiving and adding together the respective brightness data output from the first and second brightness data storage means and outputting added brightness data; and

brightness data divide-by-two means for dividing the added brightness data by two and outputting divided brightness data,

wherein the brightness data, which are output from the first and second brightness data storage means and correspond to the start and end points, respectively, are input to the first brightness data storage means, and

wherein the divided brightness data, output from the brightness data divide-by-two means, is input to the second brightness data storage means, and

wherein the brightness of the line connecting the start and end points together is determined in accordance with the divided brightness data.

10. The apparatus of Claim 5, further comprising:

linear parameter calculating means for calculating and outputting a linear parameter representing a slope of the

line connecting the start and end points together;

first selecting means for receiving the linear parameter and the output data of the first data storage means and selectively outputting either the parameter or the output data of the first data storage means to the adding means; and

second selecting means for receiving the divided data and the output data of the second data storage means and selectively outputting either the divided data or the output data of the second data storage means to the adding means.

11. An apparatus for drawing a line connecting a start point to an end point, the start and end points both being presented on display means and being represented by mutually different sets of coordinates, the apparatus comprising:

data storage means with data storage areas on which multiple coordinate data are storable, the coordinate data including first and second coordinate data of the line connecting the start and end points together;

adding means for adding together the first and second coordinate data and outputting added data; and

divide-by-two means for dividing the added data by two and outputting divided data,

wherein the divided data is stored as third coordinate data on a predetermined one of the data storage areas.

12. The apparatus of Claim 11, wherein the adding and divide-by-two means repeatedly perform the addition and the divide-by-two operation for multiple line segments a number of times determined by the number of the data storage areas, each said line segment ending at two adjacent ones of midpoints that correspond to the respective coordinate data, results of the addition and the divide-by-two operation being stored on respectively predetermined ones of the data storage areas.

13. A method for drawing a line connecting a start point to an end point using a line-drawing apparatus, the apparatus including: display means; first and second data storage means of a first in, first out type; adding means for receiving outputs of the first and second data storage means; and divide-by-two means for dividing an output of the adding means by two, the start and end points both being presented on the display means and being represented by mutually different sets of coordinates,

the method comprising the steps of:

a) outputting start and end point coordinate data, which represent the start and end points, respectively, to the display means;

b) storing the start and end point coordinate data in the first and second data storage means, respectively;

c) outputting the start point coordinate data from the

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first data storage means to the adding means and storing the start point coordinate data back to the first storage means concurrently;

d) outputting the end point coordinate data from the second data storage means to the adding means and storing the end point coordinate data on the first storage means concurrently;

e) outputting a sum of the start and end point coordinate data from the adding means to the divide-by-two means; and

f) providing output data of the divide-by-two means to the display means and storing the output data of the divide-by-two means on the second data storage means concurrently such that the output data of the divide-by-two means corresponds to the start and end point coordinate data stored in the steps c) and d).